October 2, 2023

The Honorable Michael S. Regan, Administrator U.S. Environmental Protection Agency 1200 Pennsylvania Avenue, N.W. Washington, D.C. 20460

Submitted electronically: Federal eRulemaking Portal at <u>www.regulations.gov</u>.

RE: Response to EPA Proposed Greenhouse Gas Reporting Rule: Revisions and Confidentiality Determinations for Petroleum and Natural Gas Systems. Docket Id. No. EPA-HQ-OAR-2023-0234

Dear Administrator Regan:

The Differentiated Gas Coordinating Council (DGCC) appreciates the opportunity to respond to the U.S. Environmental Protection Agency's (EPA) proposed rule titled "Greenhouse Gas Reporting Rule: Revisions and Confidentiality Determinations for Petroleum and Natural Gas Systems" (proposed rule).¹

The DGCC applauds the EPA for its proposal and its effort to bring the Greenhouse Gas Reporting Program (GHGRP) into the 21st Century. The DGCC shares the EPA's goal of drastically reducing greenhouse gas (GHG) emissions throughout the oil and gas sector. However, the DGCC believes the EPA can significantly improve the Proposed Rule, particularly as it relates to aligning with Congressional intent, encouraging the expansion of the differentiated gas market, and encouraging state-level leadership in emissions reporting.

Transitioning from estimate-based emissions factors toward empirical data is a significant advancement in our drive for precise, actionable environmental data. As the value of emissions data increases, stakeholders will inherently demand data that is high in quality. Direct measurement technologies can unlock data of much higher accuracy than scientifically informed estimates (i.e., emission factors). This high-fidelity, verifiable data will provide the trust and transparency needed to ensure the continued growth, evolution, and maturation of the differentiated gas market both domestically and internationally.

We urge the EPA to incorporate our feedback, ensuring that the final rule reflects the growth in both the industry's emissions mitigation efforts and the nation's environmental ambitions.

¹ See <u>Greenhouse Gas Reporting Rule: Revisions and Confidentiality Determinations for Petroleum and Natural Gas Systems</u>, (Proposed Rule).

I. Executive Summary

The DGCC is concerned that the EPA's proposed rule will impede the adoption of advanced methane detection technologies, despite Congress's specific directive to transition the GHGRP toward empirical measurements. Precluding the use of advanced technologies will reduce the quantity and quality of reliable, granular-level emissions data that can be used to expand the differentiated gas market and accelerate emissions reductions beyond mere regulatory minimums. This document, provided by the DGCC, evaluates the Proposed Rule and offers recommendations that not only align with the Congressional intent of the Methane Emissions Reduction Program in the Inflation Reduction Act (IRA) but also consider the swift advancements in methane detection technologies and the fundamental need for superior emissions data.

Advanced measurement technologies present unprecedented opportunities for monitoring and reporting methane emissions in the oil and gas sector. The DGCC emphasizes that the EPA must not exclude advanced measurement technologies, but instead, should take a more supportive approach. While accuracy and yearly data consistency might be of concern in certain circumstances, integrating these with existing methods can result in a significantly improved comprehensive emissions monitoring strategy.

The EPA proposes to preclude the use of all "top-down" methods for methane quantification– except for the limited purposes of calculating "Other Large Release Events." The analysis the EPA relies on for its general exclusion of top-down methods is incomplete because, among other things, it characterizes all top-down methods as providing only periodic surveying. The Agency failed to fully analyze whether there are advanced methane measurement technologies that could meet its criteria for quantification accuracy, such as continuous emissions monitoring.

For calculations that require the use of emission factors, an owner or operator of an applicable facility would have no means of demonstrating that its actual facility emissions are lower than the generalized estimates reflected in the calculation using emission factors. As a result, it could be liable for a Methane Waste Emissions Charge that does not reflect its actual emissions.

With the pace of technological evolution in methane detection and measurement, a static final rule could quickly become obsolete or hinder unexpected advances in emissions monitoring and mitigation. To ensure the rule's continued relevance, the DGCC suggests a dynamic, adaptive approval framework for emissions reporting technologies for the purpose of emissions quantification. The Agency could use appropriate quantification-related performance criteria in the technology approval process. Such measures would nurture and invite continuous innovation.

Lastly, the strides made at the state level in GHG emissions management deserve recognition. Colorado has incorporated advanced measurement technologies and introduced intensitybased methane requirements. A collaboration between the EPA and pioneering states can spearhead a cohesive and advanced national approach to emissions regulation.

In conclusion, while the DGCC commends the objectives behind the proposed rule, we advocate for its refinement to address current challenges and future advancements and align more closely with the Congressional vision.

II. Background

The DGCC is a coalition of stakeholders across the natural gas value chain dedicated to expanding the differentiated natural gas market. The DGCC's goal is to facilitate a pathway for regulators, utilities, and gas consumers to utilize differentiated gas as an important option to meet their climate goals. We believe adopting differentiated gas is the best way to rapidly reduce methane emissions in the oil and gas sector–a win for energy producers, energy consumers, and the climate.

Differentiated gas, also known as certified gas or responsibly sourced gas, is natural gas that is marketed and sold based on its verifiable environmental attributes, particularly the cumulative intensity of methane emissions throughout the production and transportation value chains.² In a world seeking to reconcile climate change and the continued use of fossil fuels, energy products with smaller GHG footprints will inevitably gain a competitive edge. The reliable verification of a cleaner product means that such a product can be sold at a premium by stakeholders who seek a trusted and transparent method of verifying emissions reductions.³ To participate in this market, natural gas producers and buyers must track, quantify, and communicate their methane and carbon dioxide emissions to investors, customers, and regulators.

According to a recent report by the International Energy Agency, more than 70% of methane emissions in oil and gas operations are avoidable, and 45% are avoidable at no net cost.⁴ Energy companies can detect and stop leaks as they occur, minimize routine flaring, improve flare efficiency, and identify and replace problematic equipment. In 2019, oil and gas companies operating on U.S. public and tribal lands leaked, vented, or flared approximately 163 billion cubic feet of natural gas into the atmosphere, resulting in nearly \$500 million of lost potential revenue.⁵ Differentiated gas can help create competitive pathways for operators to adopt advanced methane monitoring and measuring technologies and invest in commercially available mitigation solutions, developing a cleaner and more transparent industry in the eyes

² See Differentiated Gas Coordinating Council's (DGCC) "<u>What is Differentiated Gas</u>."

³ See Bloomberg Law's "<u>U.S. Can Ensure Climate Security With Differentiated Natural Gas</u>."

⁴ See International Energy Agency's "<u>Slashing methane emissions is crucial for the climate</u>."

⁵ See Environmental Defense Fund's, "<u>New Study Quantifies Natural Gas Wasted on U.S. Public and Tribal Lands</u>."

of domestic and international buyers.

Within the natural gas sector, cutting-edge methane-measuring sensors and systems are catalysts for transparency by facilitating precise quantification of methane emissions. The availability of such data, combined with mounting ESG (environmental, social, and governance) financial and regulatory drivers, holds the potential to spur the growth of a differentiated natural gas market in the United States. However, the development of such a market is contingent upon the implementation of policies that acknowledge and incentivize high-performing operators and those dedicated to comprehensive emissions quantification and disclosure. Without sufficient data, the transactability of differentiated natural gas based on emissions attributes will remain challenging, therefore limiting the emissions reductions that can be realized. The establishment of presumptive emissions rates by the EPA would inadvertently dissuade well-intentioned actors in the natural gas sector from embracing the most advanced technologies available.

The dynamic landscape of the oil and gas industry requires adaptive, clear, and wellcoordinated regulatory measures to ensure both safety and environmental sustainability. The DGCC is deeply engaged in this evolution, collaborating on technological advancement while advocating for pragmatic regulatory solutions.

III. Key Points

As stated above, the DGCC seeks to expand the use of differentiated gas to rapidly reduce methane emissions beyond regulatory standards by creating a market for low-methane-loss natural gas. By adopting advanced emissions detection technologies and aligning with robust measurement, monitoring, reporting, and verification (MMRV) best practices, the U.S. energy sector has an opportunity to lead the world in emissions reductions in the short, medium, and long-term.

The DGCC is deeply concerned that EPA's proposed rule could slow the deployment of advanced measurement technologies and hinder the adoption of MMRV best practices, thereby impeding the growing differentiated gas market while it's still in its infancy. Differentiated gas is an affordable, verifiable avenue to achieve deep cuts in emissions using existing and continuously improving technologies. However, this market is inherently driven by the need for more robust, granular emissions data gathered by such technologies. Any misalignment between the 2022 Section 111 Supplemental Methane Rule and Subpart W Reporting Rule may disincentivize the use and unintentionally limit the emissions reduction potential of the advanced technologies needed to establish robust MMRV practices to enable this market, further challenging the Biden Administration's goal of reducing U.S. methane emissions by 30% by 2030, as outlined by the Global Methane Pledge.⁶

⁶ See <u>Global Methane Pledge</u>.

Please see below for the DGCC's specific concerns.

A. EPA Must Align with Congressional Intent

The DGCC is concerned that EPA's proposed subpart W rule does not align with Congressional intent regarding the establishment of the Methane Waste Emissions Charge, as outlined in section 136 of the Clean Air Act, which was added via Section 60113 of the IRA.⁷ In this section, Congress sought to leverage recent developments in direct measurement technologies to accurately and fairly quantify operators' tax burdens under the Charge and to ensure measurable, verifiable environmental progress.⁸

The EPA's existing Subpart W rules utilize presumptive, activity-based emission factors instead of direct emission measurements. Numerous scientific studies highlight the shortcomings and inaccuracies of this approach.⁹ In light of these inadequacies, Congress has explicitly instructed the EPA to update the Subpart W regulations, as outlined in Section 136(h) of the Clean Air Act:

Not later than 2 years after the date of enactment of this section, and as necessary thereafter, the Administrator shall revise the requirements of subpart W of part 98 of title 40, Code of Federal Regulations, to ensure the reporting under such subpart, and calculation of charges under subsections (e) and (f) of this section, are based on empirical data, including data collected pursuant to subsection (a)(4), accurately reflect the total methane emissions and waste emissions from the applicable facilities, and allow owners and operators of applicable facilities to submit empirical emissions data, in a manner to be prescribed by the Administrator, to demonstrate the extent to which a charge under subsection (c) is owed.

This language clearly emphasizes the need for empirical data to accurately report and calculate charges, ensuring accurate reflection of total methane emissions from relevant facilities. Congress specifically required the Agency to "allow owners and operators of applicable facilities to submit empirical emissions data in a manner to be prescribed by [the EPA] Administrator to demonstrate the extent" to which a charge is owed. In other words, it required EPA to make it possible for a facility owner to use empirical methods to show that its facility's

⁷ See <u>Section 60113, P. L. 117-169</u>.

⁸ See letter from <u>Sen. Carper et al. to EPA Administrator Regan</u> (June 13, 2023): "[Section 136] also requires EPA to update the existing Greenhouse Gas Reporting Rule for oil and gas production - which provides the basis for assessing the waste emissions charge - to ensure more accurate quantification and reporting of methane emissions."

⁹ See, e.g., Alvarez, R. A. et al. <u>Assessment of methane emissions from the US oil and gas supply chain</u>. Science 361, 186-188 (2018); Lu X, et al. <u>Observation-derived 2010-2019 trends in methane emissions and intensities from US oil and gas fields tied to activity metrics</u>. *Proc. Natl Acad. Sci. USA*. 2023;120:e2217900120. Doi; Rutherford, J. S.; Sherwin, E. et al. <u>Closing the methane gap in US oil and natural gas production emissions inventories</u>. *Nature Comm.* 2021 12:4715. DOI: 10.1038 s41467-021-25017-4.: 10.1073/pnas.2217900120.

actual emissions are lower than what the emission factors and other conventional Subpart W reporting methods would indicate.

Section 136 does not provide a definition of "empirical," so it is appropriate to assume that Congress intended the word to have its common dictionary definition, which is "originating in or based on observation or experience."¹⁰ Emission factors do not fit this definition because they are, by definition, generalized and aggregated estimates that apply to all facilities and all activities in various categories. When Subpart W applies an emission factor to a facility, it is not a measurement of the emissions observed at that facility.

Therefore, Congress' emphasis in section 136(h) on "empirical data" constitutes a mandate to EPA to introduce greater use of direct, facility-specific measurement into the Subpart W rules.

Despite these clear instructions, the proposed rule contradicts the EPA's statutory mandate under Section 136(h). In general, it denies facility owners or operators the opportunity to employ advanced measurement methodologies for methane emissions calculation, failing to analyze the potential accuracy of advanced measurement technologies comprehensively. The rule does not provide specific analysis for advanced emission monitoring systems or establish a framework for the approval of emerging technologies as they advance over time, reflecting a gap in addressing the Congressional emphasis on empirical data and facility-specific measurements. Not only will the adoption of such a framework better align with Congress's directives, but it will also ensure a more rapid adoption of technologies and processes to mitigate methane emissions.

B. EPA Must Not Preclude the Use of Advanced Measurement Technologies

In the proposed rule, EPA refers to advanced measurement technologies-satellite monitoring, aerial monitoring, and continuous monitoring systems-under the label of "top-down" methods.¹¹ Though the Agency acknowledges that "top-down" methods are "very useful in identifying possible large emissions events (i.e., "super-emitter" events) that are not captured by other reporting obligations," EPA categorically concludes that they are "not presently able to provide annual emissions data to the degree of accuracy and certainty required by other provisions."

The Agency insists that most measurements using "top-down" methods are "taken over limited durations" at a facility and at a "single moment in time" that may not be representative of the facility's annual methane emissions. EPA also asserts that the data provided by some top-down methods are at large spatial scales, with limited ability to disaggregate to the facility- or

¹⁰ See Merriam-Webster's definition of "<u>Empirical</u>."

¹¹ See <u>Proposed Rule</u>: ("[W]e reviewed measurement approaches that utilize information from satellite, aerial, and continuous monitoring ('top-down approaches') to detect and/or quantify emissions from petroleum and natural gas system for the purposes of subpart W reporting.").

emission source-level. EPA further finds that some of these methods have detection limits that are too high to detect emissions from sources with relatively low emission rates. Citing these generalized conclusions, the EPA proposes to preclude the use of all "top-down" methods for methane quantification–except for the purposes of "Other Large Release Events" source methodology.

This analysis is incomplete. Even accepting for the sake of argument that some of the "topdown" methods have the limitations EPA identified, the Agency failed to analyze whether there are other top-down methods that nevertheless could meet its criteria for quantification accuracy such as methods with more refined detection limits. Further, EPA failed to analyze whether "top-down" methods would suffice if, for example, they were combined with Optical Gas Imaging (OGI) surveys or if they were applied with greater frequency, whether it be quarterly, bimonthly, or continuously.

These omissions are noteworthy because the Agency's own Section 111 Supplemental Proposal included a matrix for EPA's approval of the use of certain "top-down" methods and other "advanced measurement technologies" in lieu of OGI surveys and Audio Visual Olfactory inspections.¹² The matrix criteria are framed in terms of surveying frequency and detection limits.¹³ Given the Agency's granular analysis of the sufficiency of "top-down" methods at particular detection limits and particular surveying frequencies in the Section 111 Supplemental Proposal, EPA's nearly categorical dismissal of all "top-down" methods in the Proposed Rule is arbitrary and capricious.

To address the number of leaks undetected by OGI and Method 21 applications, EPA has proposed to provide a method-specific adjustment factor-referred to as the "k factor"-for calculation methods used to quantify emissions from equipment leaks using the leaker method in 40 CFR 98.233(q). EPA fails to explain why Subpart W reporters may not use data from "top-down" methods at a minimum to rebut emissions attributable to this proposed k factor. As with other emission factor data, the k factor is a generalized estimate that would apply to all relevant sources without regard to the actual volume of leaked emissions from those sources. If a Subpart W reporter is monitoring actual facility-specific emissions using an EPA-approved advanced method and detects lower emissions than the otherwise applicable k factor estimates, it should be able to use data from the former calculation to rebut the latter. We appreciate the Agency's attempt to adjust emission factors to make up for emission underestimation, but we fail to see that this could not be better and more equitably addressed by readily available, rapidly improving actual facility-specific emissions data derived from advanced technologies.

¹² See <u>Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources:</u> <u>Oil and Natural Gas Sector Climate Review</u>, (Section 111 Supplemental Proposal).

¹³ See Section 111 Supplemental Proposal, 87 Fed. Reg. at 74,740-746.

While the DGCC recognizes the EPA's concerns regarding the limitations of certain 'top-down' methods, we firmly believe that these challenges can be addressed through refined practices and continuously improving technologies.¹⁴ A framework approach, similar to the Section 111 Supplemental Proposal will promote innovation and uphold the integrity of our shared goal: to ensure accurate and effective methane emissions monitoring for a sustainable future.

C. EPA Should Provide a Future-Ready Framework for Emissions Reporting Technologies

In the rapidly evolving landscape of methane emissions measurement and quantification technology, static regulations risk becoming outdated and even counterproductive.¹⁵ This proposal's component-by-component approach does not cover many of the emerging technologies and importantly omits direct measurements for crucial categories such as certain types of tanks and flares. Furthermore, a prescriptive rule simply lacks the flexibility needed to adapt to future technological advancements and process improvements.

Section 136(h) requires EPA to "allow owners and operators of applicable facilities to submit empirical emissions data, in a manner to be prescribed by the Administrator, to demonstrate the extent to which a charge under subsection (c) is owed." Consistent with this Congressional mandate—and in the interest of promoting innovation—EPA should establish a framework in the final rule for approval of qualifying advanced measurement technologies for methane emissions measurement, including continuous monitoring systems, that owners and operators of applicable facilities may use to submit facility-specific emissions data.

It is important to recognize the lessons learned from the experience with the OOOOa regulations. As EPA well knows, almost immediately after the 2016 promulgation of those regulations, owners, and operators of regulated facilities asked to use advanced measurement technologies in lieu of the prescribed technologies, yet revised regulations are not expected until 2024. This time-lapse of eight years has been a missed opportunity for the Agency to enable the use of advanced technologies and more accurate measurement, reporting, and reductions. In those revised regulations, the Agency has now wisely proposed to establish a framework for ongoing review and approval of alternative methods. It should do the same here.

In the interest of maximizing administrative efficiency, DGCC urges EPA to leverage the technology-approval framework it has proposed for New Source Performance Standards (NSPS) OOOOb and Emissions Guidelines (EG) OOOOc wherever appropriate and

¹⁴ See the Energy Emissions Modeling and Data Lab's (EEMDL) recently released <u>Differentiated Gas Technical Road Mapping</u> <u>Initiative</u>, which will "help inform public and private sector officials across major natural gas exporting and importing countries that have shown interest in expanding the global market for low methane emissions natural gas." ¹⁵ See DGCC's "<u>Measuring Our Way to Differentiation</u>."

possible. The matrices that EPA has developed for the NSPS OOOOb and EG OOOOc Proposal provide a model for such a method-by-method approval framework.

In developing a framework for approval of advanced technologies, including continuous monitoring, for the purpose of emissions quantification, the Agency could use appropriate quantification-related performance criteria. In addition, the Agency should define how each performance criterion is tested, measured, and demonstrated.

We do not support the use of the site-by-site Alternative Means of Emission Limitations mechanism, which has proven to be administratively cumbersome and insufficiently responsive to the rate of technology advancement in this area.

The DGCC strongly urges the EPA not to rely on future notice-and-comment rulemaking to approve the use of advanced measurement technologies.

D. EPA Should Leverage Multiple Applications of Continuous Monitoring and Other Advanced Technologies to Achieve Emissions Goals

The DGCC recommends the EPA re-evaluate its treatment of continuous monitoring technologies in the proposed rule. These systems play a compelling role in monitoring, detecting, and quantifying methane emissions in the oil and natural gas industry. There are various types of continuous monitoring systems capable of detecting methane leaks and quantifying a facility's methane emissions. While each system has unique characteristics, some general principles apply to the majority of, if not all, such systems.

Continuous monitoring systems provide real-time, on-site monitoring, which makes them highly effective for pinpointing emission sources quickly. In contrast, remote sensing technologies such as satellite-based sensors or aerial surveys can cover large areas but lack precision in identifying specific sources and small sources due to higher detection thresholds, and intermittent sources of emissions due to their periodic nature. The detection thresholds for remote sensing technologies also vary greatly from continuous monitoring systems. Both remote sensing and continuous monitoring technologies have their benefits, and both will play a critical role in determining what the true emissions are at a given site.

One additional use case is the deployment of continuous pilot monitoring systems to facilitate the combustion efficiency of the flaring of natural gas, a well-known source of methane emissions. Typically, energy producers will combust unmarketable natural gas, which is mostly composed of methane, instead of venting it directly into the atmosphere. This combustion process converts the methane into carbon dioxide, which has a much lower warming effect. Unfortunately, flares are often inefficient or unlit for one reason or another, releasing significant amounts of methane into the atmosphere.

Commercially available technologies are already helping monitor, control, and reduce emissions associated with flaring. These devices can reduce methane slip, minimize costs, and improve transparency, and can cover everything from assisted flares associated with downstream petrochemical and refinery flare operations to unassisted flares associated with upstream operations. Unfortunately, the EPA's proposed rule also discourages the use of this type of continuous monitoring of combustion efficiency.

To continue to facilitate pathways for the adoption of multiple types of continuous monitoring technologies, DGCC urges EPA to create a framework that leverages the technology-approval framework it has proposed for NSPS OOOOb and EG OOOOc wherever appropriate and possible. The matrices that EPA has developed for the NSPS OOOOb and EG OOOOc Proposal provide a model for such a method-by-method approval framework.

In developing a framework for approval of advanced technologies, including continuous monitoring, for the purpose of emissions quantification, the Agency could use appropriate quantification-related performance criteria. In addition, the Agency should define how each performance criterion is tested, measured, and demonstrated. In general, EPA should clarify in the rule how continuous measurement of methane emissions data should be reported (e.g., on a five-day moving average) and used.

E. EPA Should Collaborate with State-level Leadership

The approach in the proposed rule could put the EPA off pace with leading state policies that are moving toward intensity-based methane requirements and the use of advanced measurement technologies. States such as Colorado are leading the way by beginning to allow operators to utilize advanced technologies to meet the monitoring requirements of their leak detection and repair programs.

In July 2023, Colorado finalized a rule that will require owners and operators of certain types of oil and gas facilities to directly measure their methane emissions on a facility-specific basis. ¹⁶ The state will use these calculations to derive state-wide emission inventories to assure compliance with the state's GHG intensity (emissions per unit output) thresholds. It is expected that facility owners will use advanced measurement technologies to comply with their direct measurement obligations. By embracing advanced technologies for emissions quantification and management, states like Colorado are contributing to the development and application of innovative solutions in the emissions quantification space.

¹⁶ See Colorado Department of Public Health's "<u>Colorado Adopts First-of-its-Kind to Verify Greenhouse Gas Emissions From</u> <u>Certain Oil and Gas Sites</u>."

Through the implementation of this rule, Colorado is fostering technology advancement and adoption as well as ensuring the operators in the state are utilizing empirical data to reduce their emissions and report the most accurate emissions data available. EPA should ensure that its approach can align with states like Colorado, and other states considering similar approaches, to advance the mutual goal of rapid, sustained GHG emissions reductions.

Thank you for considering the DGCC's thoughts as the EPA works to finalize the proposed rule.

Sincerely,

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Tom Hassenboehler Executive Director Differentiated Gas Coordinating Council

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About the Differentiated Gas Coordinating Council:

Established in 2022, the DGCC is an ad hoc coalition of stakeholders across the natural gas supply chain dedicated to expanding the market for low methane, "differentiated" natural gas. Its members include academics; downstream, midstream, and upstream energy producers; gas customers; and technology companies. The DGCC's goal is to facilitate a federal pathway for state regulators, utilities, and gas consumers to accept differentiated gas as an important option to meet their climate goals. We believe that the adoption of differentiated gas is the best way to rapidly reduce methane emissions in the oil and gas sector–a win for American energy producers, energy consumers, and the climate.

More information can be found at <u>www.DGCCouncil.com</u>.